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PATENTS

IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor: Christian Helmut THOMA

Appl. No.: NEW Continuation-In-Part

Group : Unknown

Filed: July 7, 2003

Examiner: Unknown

For : APPARATUS AND METHOD FOR HEATING FLUIDS

PETITION FOR ACCELERATED EXAMINATION  
PURSUANT TO MPEP 708.02 VIII

Assistant Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Date: July 7, 2003

Sir:

Pursuant to the provisions of MPEP 708.02 VIII, applicants hereby respectfully request that the present application be granted special status and be taken out of turn for early examination on the merits. In particular, applicants hereby comply with the requirements of MPEP 708.02 VIII, as follows:

(A) The present paper is the petition to make special required by MPEP 708.02 VIII (A). The undersigned hereby authorizes the Patent Office to charge deposit account number 25-0120 for the amount of the fee set forth in 37 C.F.R. 1.17(h);

(B) All of the present claims 1-35 submitted in the accompanying application are believed to be directed to a single invention for restriction purposes;

(C) A pre-examination search was made. The field of search by class and subclass was as follows, with reference to the US classification schedule: class 126/247 and class 122/26.

(D) The references found that were considered most pertinent are US Patent No. 1,149,938; US Patent number 3,791,349; US Patent number 4,424,797; US Patent number 5,188,090; US Patent number 5,392,737; US Patent number 5,913,306. A copy is each is attached.

(E) U.S. Patent No. 1,149,938 is a hydraulic brake mechanism employing a rotating rotor rotating inside a static surrounding drum in the form of a cylindrical body portion. The invention teaches a rotor provided with a plurality of tangentially extending cavities or slots and the interior of the drum is also provided with similar cavities or slots. In the annular clearance between rotor and drum are a pair of rings and where the rings can be moved axially within the annular clearance in order that the degree in which the cavities in the rotor and in the drum are permitted to oppose each other can be varied. In operation, where the cavities are in opposition to one another, fluid is forced into the cavities in the drum which causes a resistance in the rotation of the drum, and hence the device is useful as a dynamometer brake. In order for such resistance to take place, the fluid inlet is positioned radially inwards of the rings whereas the fluid outlet is positioned radially outwards of the rings.

U.S. Patent No. 3,198,191 is a heat generator employing a shaft-driven impeller in the form of a multiple vaned squirrel cage mounted for rotating in a stationary housing provided with a plurality of vortex chambers in the form of pockets extending radially into the walls of the housing. Heated fluid is expelled out of the rear of the generator and the flow direction through the generator is such that the fluid inlet is disposed radially outwards of the fluid outlet.

U.S. Patent No. 4,277,020 is a fluid friction heater employing a rotating cylindrical drum within a housing and where spiral-shaped grooves are disposed on the outer peripheral surface of the drum as well as in the interior of the housing. Fluid enters the heater at one end of the drum and negotiates a flow path formed between the grooves to be expelled from the machine at the opposite end of the drum. Both fluid inlet and outlet are disposed radially outwards of the rotational axis of the drum by the same amount. An auxiliary flow circuit is also disclosed in a further embodiment shown as Fig. 6, and where in this instance both inlet and outlet for the auxiliary circuit are disposed radially outwards of the static housing component surrounding the rotating drum. Here the auxiliary flow circuit is completely independent of the fluid pathway formed between the respective spiral-shaped grooves on the outer peripheral surface of the drum as static member of the housing.

US Patent number 3,791,349 is a steam generator employing a complex conical rotating rotor assembly having numerous internal passages causing the fluid therein to circulate back and forwards to achieve negative pressure through operationally induced shock waves.

U.S. Patent No. 4,424,797 is liquid heating apparatus employing a rotating cylindrical rotor inside a static housing and where fluid entering at one end of the housing navigates past the annular clearance existing between the rotor and the housing to exit the housing at the opposite end. The fluid is arranged to navigate this annular clearance between the static and non-static fluid boundary guiding surfaces, relying principally on the shearing effect in order to heat the liquid.

U.S. Patent No. 5,188,090 also employs a rotating cylindrical rotor inside a static housing and where fluid entering at one end of the housing navigates past the annular clearance existing between the rotor and the housing to exit the housing at the opposite end. The main point of difference over the device of U.S. Patent No. 4,424,797 is that the outer surface of the rotor includes a number of surface irregularities in the form of bores having depths exceeding their diameters.

US Patent number 5,392,737 is a friction heater employing conical friction surfaces in order to generate heat, the generated heat passing into a fluid reservoir that surrounds the internal elements of the device include such friction surfaces. The friction surfaces have to be engaged in order for this device to produce heat and therefore no gap can exist between the surfaces during operation. Spring 90 ensures that surfaces 108, 110 are always engaged together and where screwing nut 86 increases or decreases the compression provided by spring 90 against plate 70. As such this device does not rely on a clearance between the operational surfaces only that the pressure pushing surfaces together is variable.


US Patent number 5,913,306 is a viscous fluid heater used in automobiles. Although the device does employ a rotating conical rotor, it is a closed fluid circuit requiring silicon oil and the silicon oil remains within the confines of the housing. A completely separate and adjacent independently fluid flow chamber is needed for absorbing and withdrawing the heat generated by the viscous shear in the first chamber through a shared intermediary boundary housing wall. Fluid for withdrawing the heat from the silicon oil requires some external pumping mechanism.

In contrast to the references mentioned above, the present invention is more flexible and more economic to build as any heat and pressure deterioration in the bearing and seal members is less of a concern due to being positioned closer to where the cooler fluid enters the machine and farther from where the heater fluid exits the machine.

Consequently, it is believed that all of present claims 1- 35 are allowable relative to the prior art discussed above, and that the requirements for accelerated examination pursuant to MPEP 708.02 VIII have been complied with.

An early action on the merits of the present application is accordingly respectfully requested.

Respectfully submitted,  
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